

AWAH Z3 Series - Power Ascender & Descender

User Manual



V1.0

Product Name	knight-errant
Model	Z3-PROF / Z3-FIRE
Product Types	Ascender / Descender
Execution Standards Execution Standards	XF 494–2023
Language	English



User Manual



AWAH Z3 - Power Ascender & Descender

Read the manual before use

Please keep this instruction manual safe and available to record any repairs or maintenance done on the unit.

This manual describes how to use this product correctly, which describes only the techniques and methods of use that are correct. Please pay extra attention to the warning signs, which identify the potential hazards and special precautions for using this product, but they are not exhaustive, please visit the company's website or WeChat public account for more information or updated versions of instructions. It is the user's responsibility to read all instructions and use this product correctly, any misuse will cause safety risks. If you have any questions or do not fully understand this manual, please contact us.

Declaration of Conformity

AWAH Z3 - Power Ascender & Descender has been tested and qualified according to the following standards.

No.	Standards	Product type	Inspection and testing Report number	Testing institutions
1	XF 494—2023	General Use Ascender	GTFWT20241113	Jiangsu Special Safety Protection Product Quality Supervision and Inspection Center
2	XF 494—2023	General Use Descender	GTFWT20241114	Jiangsu Special Safety Protection Product Quality Supervision and Inspection Center

Artisans Working At Heights Co., Ltd.

April 2, 2024

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1Responsibilities and warnings

Any work involving the use of this product is dangerous. Users are responsible for and bear the consequences for their actions, decisions and safety. Do not use this product if you cannot assume responsibility or cannot fully understand this manual.

1.1Before using this product, you must:

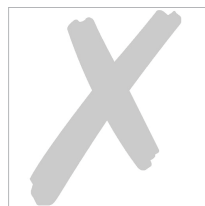
- Read and understand this user manual completely.
- Specific training for the proper use of this product in a safe environment.
- Familiarize yourself with this product, understand its performance, the restrictions of using and emergency disposal methods.
- Understand and accept the dangers involved.

1.2This product is intended for use only by competent and responsible personnel or under direct visual supervision by competent and responsible persons.

1.3Ignoring any of these warnings can result in damage to property, serious injury or even death.

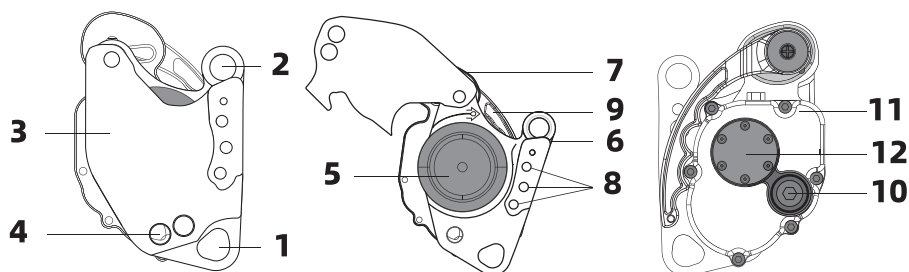
1.4The company does not assume any responsibility for any direct or indirect results such as property damage or personal injury or death caused by the use of this product.

1.5It is recommended to purchase commercial insurance for users and goods to cover property damage or personal injury or death caused by possible operational errors.

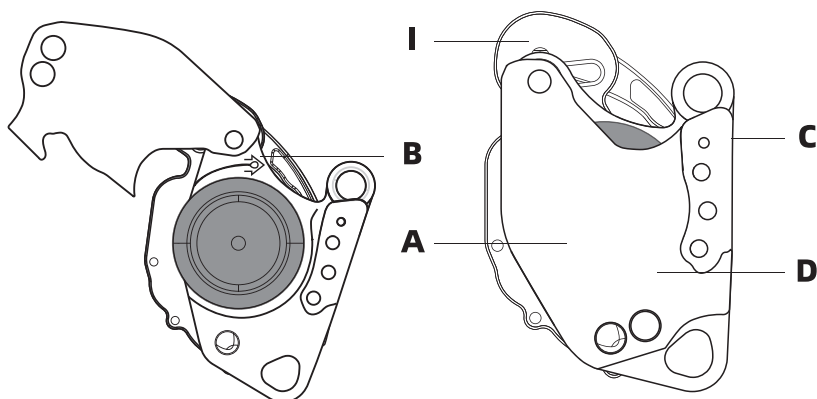


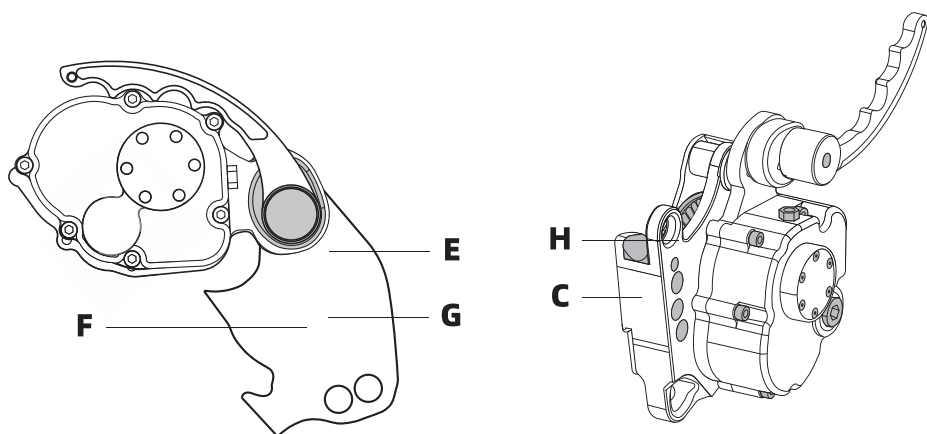
2 Product introduction

2.1 Product illustrations



- | | | |
|------------------------------------|-------------------------------|-------------------------------------|
| ① Main attachment hole | ② Becket | ③ Movable side panel |
| ④ Fixing pin | ⑤ Wheel for winding rope | ⑥ Friction block |
| ⑦ Guide bearing for rope in | ⑧ Guide bearings for rope out | ⑨ Handle for Releasing |
| ⑩ Electric drill adapter interface | ⑪ Gearbox | ⑫ self-locking device after crashed |





- A** Name & Model **B** Indication of correct position **C** Hot scald tip
- D** User manual **E** Download user manual **F** Technical specifications
- G** Serial Number **H** Becket strength **I** Indication of handle position

23 C 00 00 0000-XXXX

year of manufacture	—							identifying code
month of manufacture	—							
day of manufacture	—							
	—							
	—							
	—							
	—							
	—							



Beware: Personnel falling Falling objects Risk of mechanical injury High equipment temperatures



Designed for kernmantle ropes (sheath + core).
No twisted rope or cable allowed.



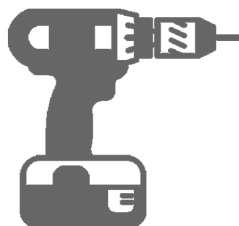
Carabiners(XF 494、GB/T 23469、EN 362)



hammers



wrenches
impact drills
screwdrivers

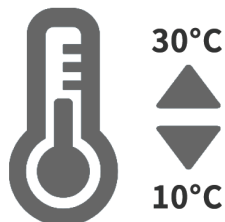


Torque: 120 ~ 160 N?m / 1100-1450 in-lbs

NO IMPACT DRILL



Send it back to the manufacturer for repair. Do not repair yourself.



Store in a cool and dry environment. Avoid heavy pressure, drops, and dust



Prohibit contact with corrosive substances

Figure 1 Indication of correct position

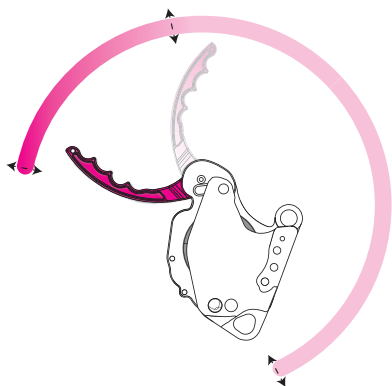


Figure 2 Load the rope

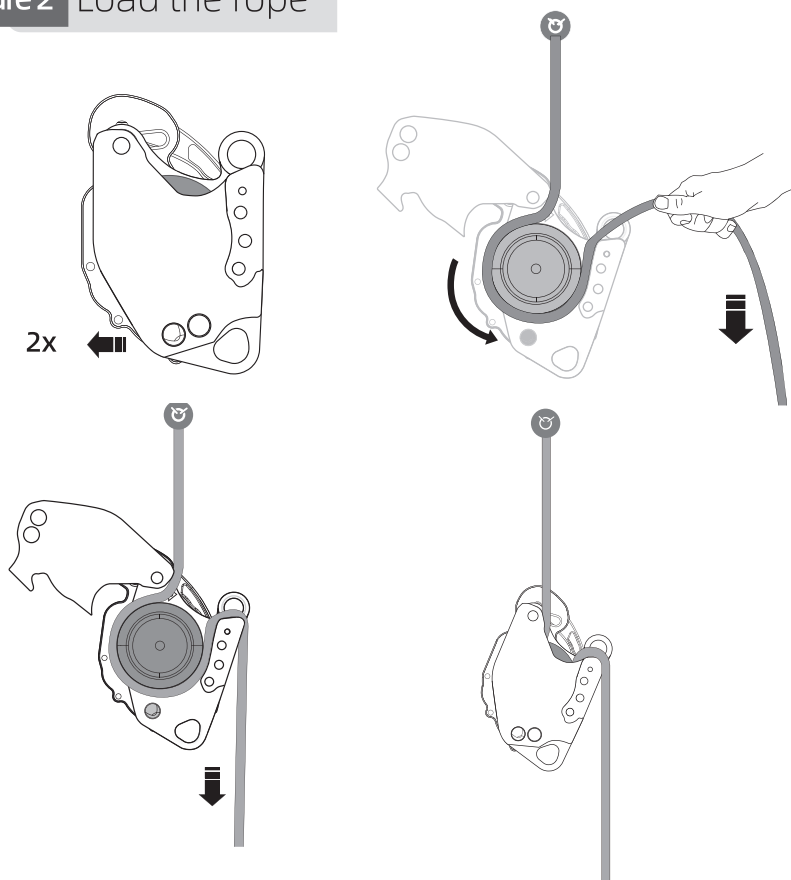


Figure 3 Functional checks

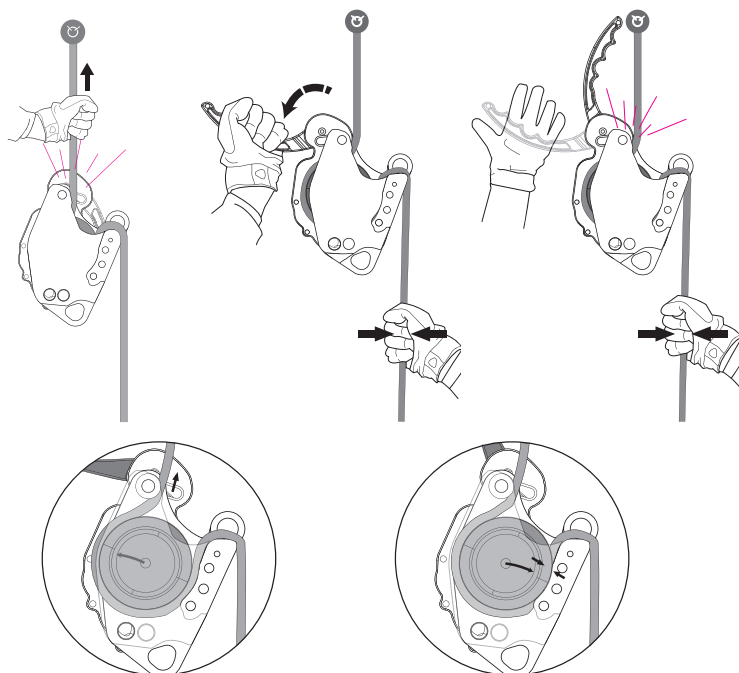


Figure 4 Lifting

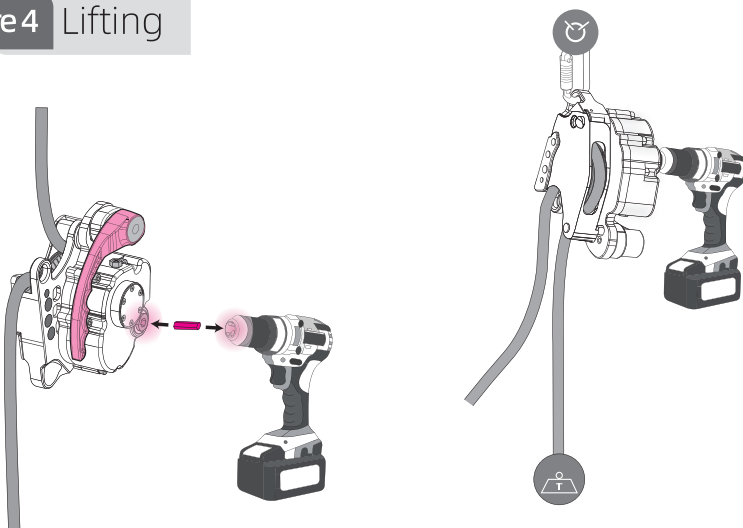


Figure 5 Lowering

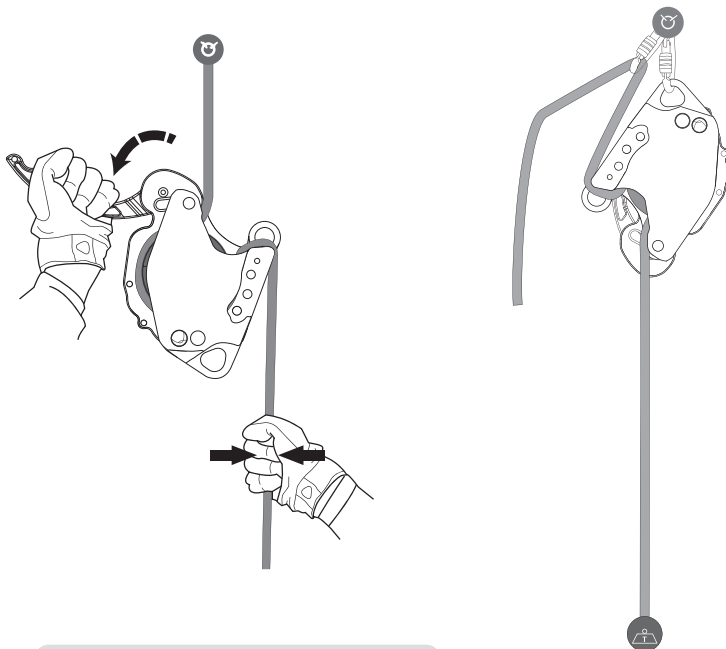
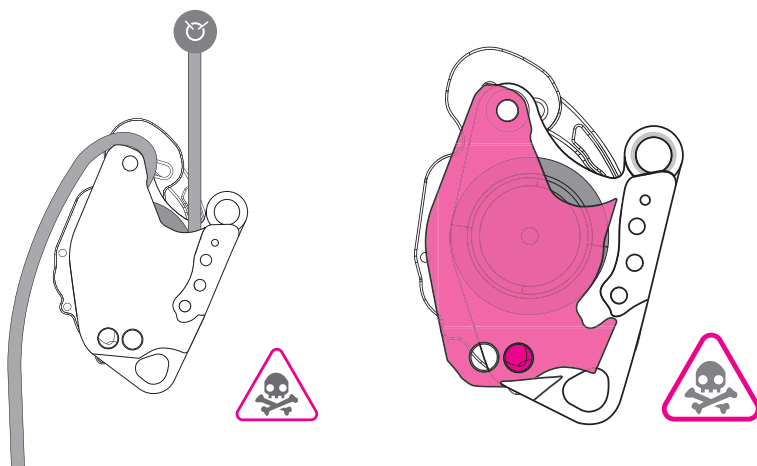
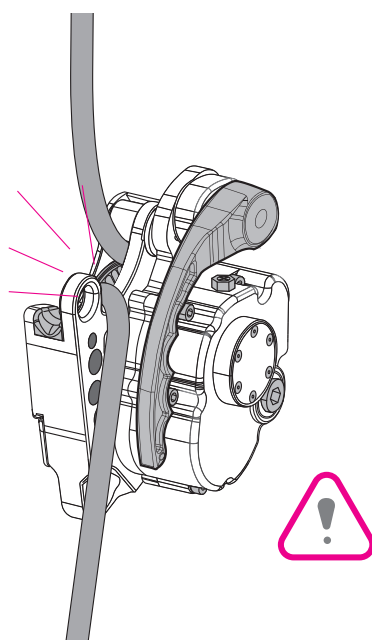
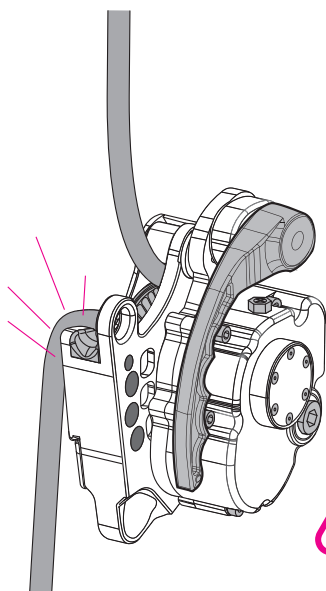
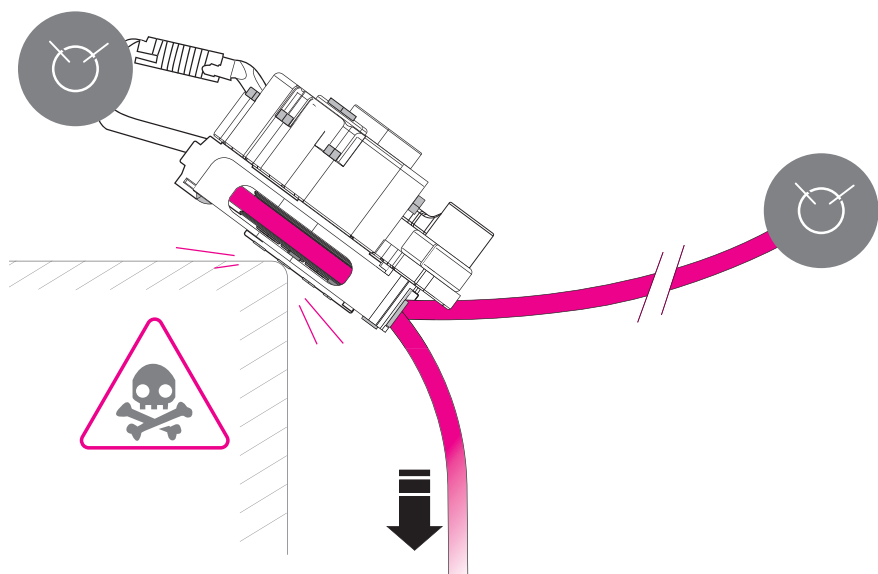


Figure 6 Incorrect operation





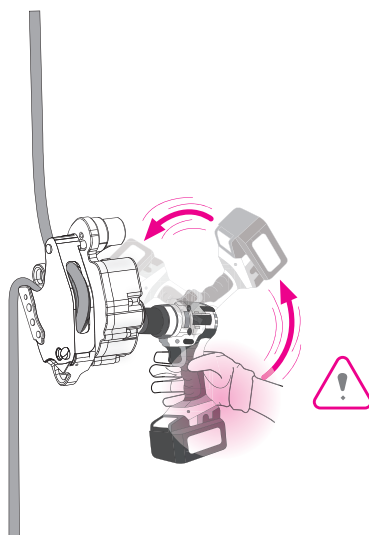
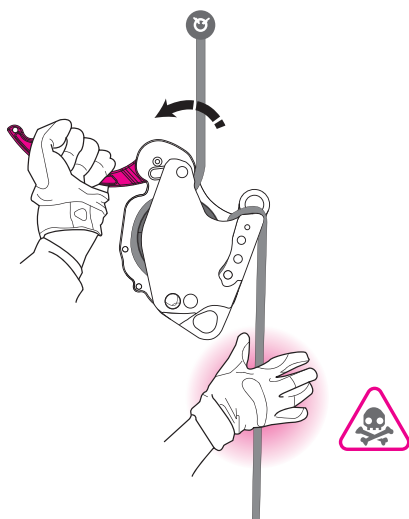
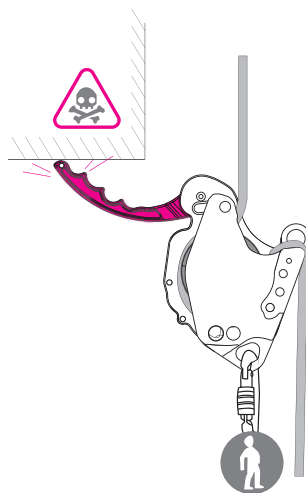
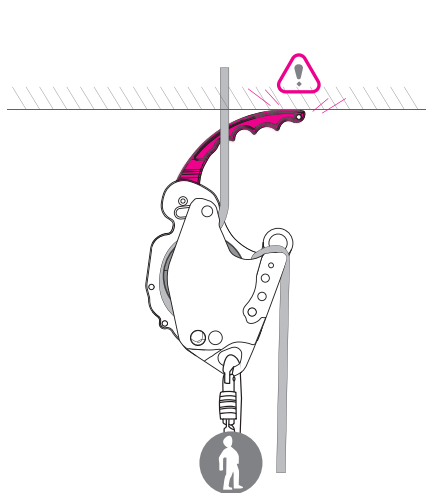


Figure 7 Locking off the rope

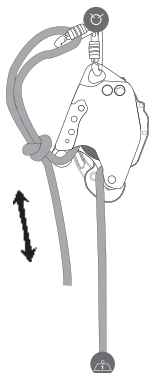


Figure 8 Manual lifting systems

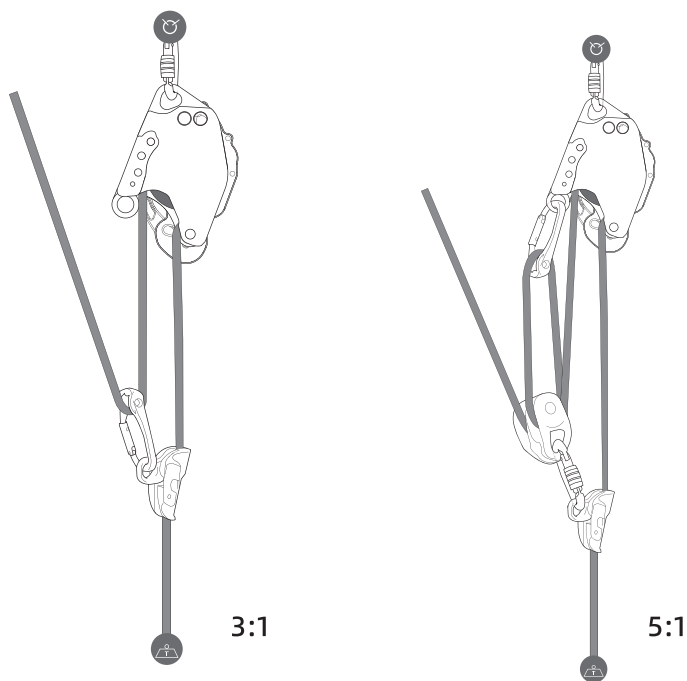
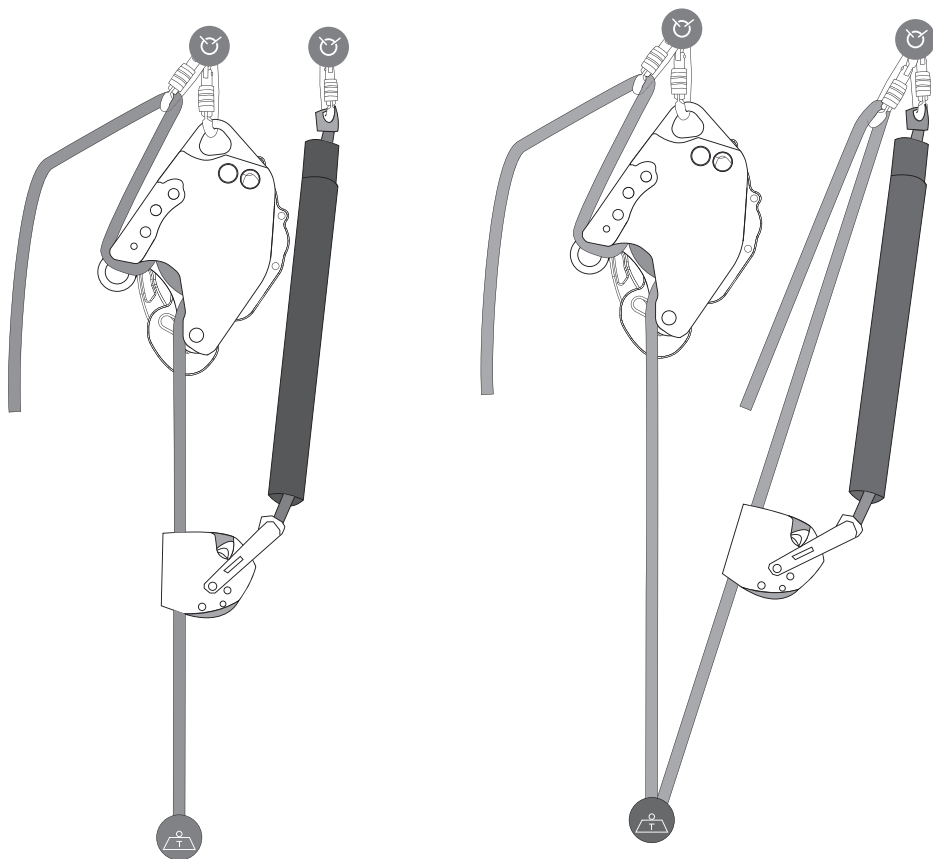


Figure 9 Backup systems



2.2 Product Introduction

AWAH Z3 is an ascender driven by an electric drill and also a manual descender, It can be connected to an electric drill to provide lifting power. This unit allows for efficient assistance in lifting and lowering goods or personnel.

This product has a built-in self-locking device that can be auto activated after the gears crashed. After the gears crashed, the equipment will lose its one-way locking function, and the rope will drive the wheel to rotate in the opposite direction. After falling about 10 cm, the built-in self-locking device is activated, and the wheel immediately locks, then deflects and squeezes the rope and locking.

Note: After the self-locking throw block is activated, personnel/heavy objects should be carefully lowered to the ground. Subsequently, the stop use this equipment immediately and scrap it, or return it to the factory for repair.

2.3 Scope of use

2.3.1 This product is mainly used to lift or lower goods or personnel.

2.3.2 This product is equipped with a hexagonal interface and an adapter shaft (8 mm or 5/16"). To lift weight, use an electric drill to turn the adapter shaft clockwise, counterclockwise rotation is idle.

2.3.3 Use in environments with chemical hazards such as seawater or corrosive liquids and gases will lead to a reduced product lifespan. This can cause safety hazards, the product should not be used in the above environments.

2.4 Technical specifications

Model	Z3-PROF	Z3-FIRE
Specifications	Professional model	Firefighter model
Execution Standards	XF 494–2023 Fire Rescue Industry Standards of China	
Product type	Ascender / Descender	
Weight	2.30 kg	2.37 kg
Rope type	EN 1891 type A Ultra-high molecular weight polyethylene and polypropylene ropes are prohibited	
Rope diameter	10 ~ 11 mm	10 ~ 11 mm
Load Range	30 kg ~ 200 kg	30 kg ~ 285 kg
Gear Ratio	8:1	8:1
Swivel	No	Yes
Torque of Electric Drill	120 ~ 160 N?m / 1100-1450 in-lbs No Impact (Brushless Drill Recommended)	
Descent Speed Limit	0.5 m/s (Max Load) ~ 2.0 m/s (Min Load)	
Anti-fall height	≤ 1 m	
Operating Temperature	– 15° C ~ 45° C	
Dustproof and waterproof	IP66	
Lifespan	6 years after production	

2.5 Compatible parts


2.5.1 The anchor devices connected to this product shall meet the requirements of XF 494, GB 30862, EN 795 or higher performance.


2.5.2 The connectors connected to this product shall meet the requirements of XF 494, GB/T 23469, EN 362 or higher performance.

2.5.3 The harnesses connected to this product should meet the corresponding category or higher performance requirements of XF 494, GB 6095, EN 358, EN 813, EN 361, etc. according to the different usage scenarios.

2.5.4 The electric drills connected to this product should meet the torque requirements in section 2.4. It is strictly forbidden to use electric hammers, electric wrenches, impact drills, screwdrivers and other power tools with rotary impact or radial impact functions. Do not use the impact gear setting of electric drills. The shock function will damage the gears of this product, resulting in damage to the equipment.

2.5.5 This product works best with EN 1891 type A ropes. Typical materials for the manufacture of such ropes are polyamide or polyester or a mixture of both. The best rope structure is when the sheath tightly wraps the core. Ultra-high molecular weight polyethylene and polypropylene ropes are prohibited. A stiff rope feeds out of the pulley better. The thickness of the rope directly affects the load that this product can carry, that is, the thinner the rope, the more likely it is to slide under lower loads. The use of spiral ropes, wire ropes, flat belts (ropes) or chains is forbidden.

 **Note 1:** The lifting power of this product comes from the friction between the rope and the wheel, so it is inevitable that the rope will be worn; The greater the load, the faster the rope will wear out. The longer it is used, the more wear and tear the rope will see.

 **Note 2:** The life of this product is usually longer than that of the rope, so frequently check the condition of your ropes and replace them if there are signs of wear. The life of ropes varies greatly depending on the quality, refer to the information provided by the rope manufacturer to assess when the rope should be scrapped.

3 Safety Rules

The user should have the corresponding theoretical knowledge and practical ability of working at height, and must read and understand this manual completely, and master the working principle, use essentials, performance characteristics, use restrictions and emergency disposal methods of this product, in order to help safe operation.

3.1 When using this product, do not use anchor devices, connectors, harnesses or ropes that do not meet the requirements of this manual. Strictly limited to use within the nominal load range. Overloaded use will shorten the life of this product, accelerate rope damage and electric drill wear. Serious overload may damage the equipment during one use (including damage to the main body of the equipment, damage to components such as attachment holes, handle, gears, and compatible parts such as ropes, connectors and electric drills).

3.2 Users who suffer from any physical illness, psychological disorder, or drug dependence that may affect safe operation may pose a hazard, such as: high blood pressure, heart disease, dizziness; acrophobia; binge drinking; sudden illness during work, etc. If you feel unwell, please immediately stop working with this product.

3.3 Before use, a sufficiently wide isolation area should be set up. Supervision should be arranged, and unrelated personnel should be prohibited from entering the work area to prevent being injured by falling

objects or the work system from being damaged by someone.

3.4 Users should take protective measures in advance. Correctly wear harnesses, gloves, helmets, goggles, shoes and other PPE suitable for the nature of work that meet relevant standards. This prevents accidents such as falling from height, electric shock, extrusion, impact, and rope breakage.

3.5 When lifting or lowering goods or personnel, we suggest use a personal protective equipment (PPE) backup safety system, as shown in Figure 10.

3.6 To prevent damage to personnel, goods, ropes, and this product, do not obstruct the path of lifting and descending.

3.7 The wheel and friction block of this product may produce high temperature during use or just after use. Heat accumulation will cause the braking performance to deteriorate, and may melt the rope. If the temperature gets too hot, it can be cooled with water, but **DO NOT STOP MOVING THE ROPE THROUGH THE DEVICE**. The rope will be melted if exposed to the high temperature for too long at the same spot. The rope should be removed immediately after use and this product should be left to rest until cooled, otherwise it may cause burns and damage to the rope.

3.8 In the normal use of this product, friction block, wheel, attachment hole, gears, as well as connectors and ropes will gradually wear. Always inspect the device before use. In-use inspection, regular inspection, and scrap assessment all help to eliminate potential safety hazards.

3.9 This product is not intended for fall arrest. Excessive impact force may cause injury to the user or damage to the equipment.

4 Operating Instructions


4.1 Loading the rope


- (1) Attach this product to the anchor device(s) with reliable connectors.
- (2) Open the movable side panel and load the rope.
- (3) Close the movable side panel.
- (4) Check to make sure the handle is in the locked position.

4.2 Install a backup system

We suggest using the backup systems listed in Figure 9. suggest A fall arrest system or rope clamp that complies with the relevant standards or is certified is recommended.

Attention: Some fall arresters cannot effectively stop falls on taut ropes and cannot be used in the way shown in Figure 9 (①). They can only be used in the way shown in ② (attention should be paid to whether the possible extension of the rope after a fall occurs is within the safe allowable range).

 Warning 1: The amount of slack in the backup system should be as small as possible to reduce the impact of the fall. The backup system should have a certain degree of flexibility to cushion the impact of the fall.

 Warning 2: The load to be lifted or lower should be within the allowable range of the backup system, and overload use will be a safety risk.



Warning 3: There should be adequate clearance distance under the backup safety system to prevent hitting obstacles or the ground when falling.

4.3 Lifting

4.3.1 Lifting manually. If this product is attached to the upper anchor point, and after the rope is properly loaded, it can be used as a progress capture device to manually lift weight.

4.3.2 Lifting by electric drill. This product supports clockwise rotation of the electric drill to input power for lifting heavy objects, and counterclockwise rotation is idle.

Warning: When using an electric drill to lift, always ensure that the release handle is in the locked position to prevent the goods or personnel from falling.

4.3.3 When the attachment hole is connected to the user's harness, This product can lift the user and move up with him/her; When the attachment hole is connected to the anchor point, this product does not move with the user and can be used to lift remote goods or personnel. This product can be used alone or combined with additional pulley(s) to form a mechanical advantage System.

4.4 Lowering

4.4.1 When the attachment hole is connected to the user's harness, this product can be used as a personal descender to lower the user himself; When the attachment hole is connected to the anchor point, this product is used to lower goods, or as a manual descender to rescue personnel.

4.4.2 Prepare for lowering.

(1) Load the rope correctly;

(2) Check to ensure that the handle is in the locked position;

4.4.3 Descent steps.

(1) Grasp the control end of the rope tightly with your right hand.

(2) Slowly turn the release handle with your left hand.

(3) The user begins to descend slowly after obtaining appropriate friction; during the descent, the right hand maintains control of the control end of the rope, and it is strictly forbidden to take off the hand;

(5) To pause the descent, turn the release handle to the locked position.

(6) In case of emergency, the release handle can be quickly and completely released to allow it to quickly rebound back into the locked position to quickly stop the descent, but it is not recommended to use this method frequently due to possible impact on the product, rope and anchor device(s).



Warning: If there is an obstacle within the range of activity of the release handle, it may cause it to not automatically rebound to the locked position, and there is a risk of falling.



Warning: If there is an obstacle within the range of activity of the release handle, it may result in insufficient range of motion for the handle, making it impossible to unlock.

4.5 Rope retraction

This product can assist in rope retrieval quickly. Load the rope into this product, then connect electric drill to quickly retrieve the free rope.

5 Device checks

5.1 Check before used

Before using this product, inspect and test that you have the correct rope, and correct connecting components is functioning properly.



Note: Other connecting components are also necessary for systematic safety, please refer to the information provided by the relevant manufacturer to check as required.

5.1.1 Check whether this product has deformation, corrosion, cracks, severe wear, sharp surfaces, etc. If any, stop using it immediately, and contact the manufacturer for technical support.

5.1.2 Check the cleanliness of components such as wheel, friction block, etc. If the above friction components have grease, it will reduce the friction, resulting in the accidental fall of goods or personnel. If the above friction components have grains of sand, it will cause rapid wear and tear.

5.1.3 Check whether the rope is broken, the rope sheath is broken, partially thickened, partially raised, partially dented, severely fuzzy, excessively hardened, excessively soft, entangled, knotted in the middle, or dirty. Make sure the rope has a clear history of use and no contact with substances (oils, acids, alkalis, unknown chemicals, etc.) that may weaken the performance of the rope. If the above situation occurs, the rope should be replaced with a new rope without safety hazards, and the above inspection should be performed before use too.

5.1.4 If the noise of gear has significantly increased when running, abnormal jitter, unable to input power to lift, unstable work or stuck, etc., it may indicate that the ball bearings and gears of the equipment are worn excessively. Stop immediately and contact the manufacturer for technical

support.

5.1.5 Before official use, at least 1 lifting and lowering test of goods should be taken. It is recommended that the lifting height is not more than 30 cm / 12 inches. Pay attention to listen to whether the "click" sound emitted by the ratchet working is deep and even. If the sound is not normal, the equipment may be faulty and should immediately stop being used. Contact the manufacturer for technical support.

5.2 Inspection during use

5.2.1 During the lifting process, pay close attention to the abnormal situation of the equipment in accordance with the requirements of 5.1.4 and 5.1.5.

5.2.2 During lifting, it is necessary to observe whether the rope is sliding in the wheel, as continuous sliding can generate high temperatures and cause damage to the rope.

5.2.3 During lowering, pay close attention to the temperature of the wheel and friction block in accordance with the requirements of 3.7.

5.3 Inspection regularly

Carry out as comprehensive inspection every 6 months. In addition to the pre-use inspection items, the following items should be checked:

5.3.1 Check the friction block, if the wear is excessive, it should be scrapped in time or contact the manufacturer for replacement.

5.3.2 This product is internally lubricated with grease and theoretically does not require replacement throughout its entire lifespan. If there is a significant increase in operating noise, customers can open the gearbox themselves, clean it thoroughly, and then add high viscosity and high-temperature lubricating grease again. If the user has difficulty with this operation, please send it back to the manufacturer for maintenance.



Warning: Do not inject oil into the self-locking device, otherwise it will fail.

5.3.3 Check the moving parts and springs of the release handle. If they are stuck, clean them thoroughly and apply lubricating grease.


5.3.4 Check all fixing bolts of the product. If they protrude above the mounting surface, they are loose. Use an electric screwdriver to tighten them. If the bolts loosen repeatedly, add a small amount of low-temperature anaerobic glue, tighten them, and let stand and solidify before use.

5.4 Scrap assessment

A comprehensive inspection should be carried out every 12 months, and in addition to the regular inspection items, the following items should be checked:

5.4.1 The main structure of this product is metal, stored in a dry, cool, sealed and non-corrosive liquid and corrosive gas environment, the theoretical life is 6 years after production.

5.4.2 The amount of wear of the wheel. Use the nominal max load for testing, use a electric drill for lifting testing. If the rope slides in the wheel, the entire machine should be scrapped or returned to the factory for maintenance.

 **Note:** The jamming of the small guide bearings can lead to a decrease in lifting performance, which can be mistakenly judged as rope wheel wear. The lifting ability of different ropes varies, which may also lead to misjudgment.

5.4.3 The user should record and analyze the lifting and lowering load, running distance and other data, and recommend scrapping after exceeding the nominal allowable range. If assessed for continued use, more rigorous pre-use inspections, in-use inspections, and periodic inspections at shorter intervals should be performed.

If there is any doubt about the security of the device, you should immediately stop using it and contact the manufacturer for technical support.

6 Storage and maintenance

Good storage and maintenance can extend the life of this product.

6.1 This product is suitable for storage in an environment of 10°C~30°C / 50 °F ~90 °F , to avoid water ingress, moisture, corrosive liquid and corrosive gas erosion, to avoid heavy pressure and falls from height.

6.2 During transportation, a bag or box with a cushioning capacity should be used to protect this product from severe impact, contact with sediment and dust, etc., and transported according to the requirements of storage conditions.

6.3 After each use, this product should be wiped clean with a clean fresh wet towel, and then ventilated to dry, not exposed to the sun, to avoid sweat and other corrosive liquids staying on the surface for a long time and causing corrosion.

6.4 The gears of this product can be replaced after damage, provided that other parts are still available after inspection.

6.5 Regularly inspect the handle moving parts and guide bearings, clean up dirt and add lubricating oil.

6.6 Except for the routine maintenance of re lubricating the gearbox, any modification, replacement of parts or repair of this product can only be carried out by the manufacturer or authorized distributors, and self disassembly, modification and repair are strictly prohibited.

7 Limited Warranty

This product is a consumable. The manufacturer provides (one) year limited warranty for defects in the materials and production process of the product.

The warranty does not cover damage to the product caused by wear, deformation, corrosion, oxidation, self-modification or repair, incorrect operation, improper storage and transportation, and other usage than for which it was designed.

Tips: Please pay close attention to the information on the official website (www.awah.cn) , register the product on our WeChat official account, and keep your contact information open to ensure that you do not miss possible product defect recall notices.

AWAH-Z3 packing list



No.	Name	Quantity	Unit	Remark
1	AWAH-Z3	1	Unit	
2	hex bit (8 mm or 5/16")	2	Unit	
3	User manual	0	Unit	Please download the electronic edition from our website from our website
4	Certificate of conformity	1	Unit	

AWAH-Z3 Repair record sheet



Device name:

SN:

No.	Repair items	Repairer	Date
1	Replace the friction block		
2	Replace the handle spring		
3	Repair the gearbox		
4	Replace the guide bearings		
5	The whole product is returned to the factory for maintenance		
6			
7			

AWAH-Z3 Repair record sheet



Device name:

SN:

Location		Inspector signature	Date
No.	Detect items		Detection results
1	The handle rebounds normally to the locked position		
2	The wheel locks when the rope is pulled on one side and turns when pulled on the other side		
3	Rotate the wheel slowly, you can hear a deep and even "click" sound		
4	The movable side panel can open and snap into the fixing pins normally		
5	The attachment holes are not deformed or cracked		
6	There is no serious oil leakage in the housing		
7	The body is free from corrosion, deformation, cracking, or wear		
8	Bolts, rivets, and other fasteners are not loosen		
9	The remaining size of the wheel and friction block is within the safety range		
10	The texts, marks, etc. on the body are clearly legible		

Detection results

Note: The test result is "normal", "pending further inspection", "repair required", "scrapped".

AWAH-Z3 Repair record sheet



Device name:

SN: _____ **Date of use:** _____

Date of use:

Usage Times	Lifting mass(kg/lbs)	Lifting height(m/ft)	Lowering mass(kg/lbs)	Lowering height(m/ft)	Remark
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
subtotal	Average kg/lbs	Total m/ft	average kg/lbs	Total m/ft	

AWAH-Z3 Repair record sheet



Device name:

SN: **Date of use:**

Date of use:

Usage Times	Lifting mass(kg/lbs)	Lifting height(m/ft)	Lowering mass(kg/lbs)	Lowering height(m/ft)	Remark
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
subtotal	Average kg/lbs	Total m/ft	average kg/lbs	Total m/ft	

AWAH-Z3 Repair record sheet



Device name:

SN:

Date of use:

Usage Times	Lifting mass(kg/lbs)	Lifting height(m/ft)	Lowering mass(kg/lbs)	Lowering height(m/ft)	Remark
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
subtotal	Average kg/lbs	Total m/ft	average kg/lbs	Total m/ft	



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